REMARKS

Reconsideration of the application as amended is requested.

Claims 6-11 have been cancelled in response to the Restriction Requirement. Applicants reserve their right to pursue the non-elected claims in divisional applications. No new matter has been added by virtue of the amendments to the claims.

Restriction Requirement

Applicants confirm the election of Group I, claims 1-5, without traverse. Applicants further confirm the selection of *B. napus* as the species for initial examination of claim 3, but submit that rejoinder of claims encompassing assaying for PM1 and PM2 mutations in *B. campestris/rapa* and *B. juncea* is appropriate upon a determination of allowability for claims directed to *B. napus*, for the reasons set forth below in the traversal of the objection to claim 3.

Requirement for Information

The Examiner has requested information regarding a May 2001 publication disclosing an agreement between BASF and Saskatchewan Wheat Pool relating to development of herbicide-resistant canola varieties. Specifically, the Examiner inquires whether the herbicide-resistant canola varieties contain the PM1 and PM2 mutations, and if so, does the development of the new varieties include nucleic acid based methods to detect the PM1 and PM2 mutations.

Applicants thank the Examiner for the telephonic clarification of this request, namely, that the Examiner requests information on whether the presently claimed methods were publicly disclosed before the priority date of the instant application.

Submitted herewith is a Declaration Pursuant to 37 C.F.R. 1.132 of Dwight More, Global Marketing Manager for CLEARFIELD® oilseeds, including canola, since 1995. Mr. More states that the presently claimed assay for the PM1 and PM2 mutations was not publicly disclosed or offered for sale before October 29, 2002, the filing date of USSN 60/421,993 and the priority date of the instant application.

Claim Objections

Claim 3 has been objected to as containing non-elected subject matter in the recitations of *B. campestris/napa* and *B. juncea*. This objection is respectfully traversed.

The PM1 and PM2 mutations from *B. napus* can be introgressed into *B. campestris/rapa* and *B. juncea* using techniques known to those of ordinary skill in the art of canola breeding. Such introgression techniques are described, for example, in Somers, et al. (2002) *Theor. App. Genetics* 104, 1121-1124, a copy of which is attached hereto as Exhibit A. Interspecific crosses are also described, Bing, et al. (1996) *Plant Breeding* **115,** 470–473, "Hybridizations among *Brassica napus*, *B rapa* and *B juncea* and their two weedy relatives *B nigra* and *Sinapis arvensis* under open pollination conditions in the field".[1]

The presently claimed invention is therefore equally applicable to *B. campestris/rapa* and *B. juncea* plants into which the PM1 and PM2 mutations have been introgressed. Withdrawal of the objection to claim 3 is respectfully requested.

Rejections pursuant to 35 U.S.C. § 103

Claims 1-5 stand rejected under § 103 as being unpatentable over Beetham et al in view of Rutledge et al., Hattori et al. and Sathasivan et al. The Examiner takes the position that Beetham et al. teaches the PM1 mutation of *B. napus* AHAS1 and the PM2 mutation of *B. napus* AHAS3, but admits that the primary reference is deficient in disclosing a method for detecting these mutations. The Examiner opines that the deficiencies of the primary reference are corrected by the combination of: the teachings of DNA isolation and the *B. napus* AHAS1 and AHAS3 sequences in Rutledge et al., the disclosure of the PM2 mutation and amplification of the AHAS1 gene in Hattori et al., and the disclosure of the serine to arginine mutation at position 653 of *A. thaliana* ALS in Sathasivan et al. This rejection is respectfully traversed.

[1] Applicants are in the process of obtaining a copy of Bing et al. to submit as a supplement to the present response.

As the Examiner has recognized, the PM2 mutation of the present application corresponds to the tryptophan to leucine mutation at position 557 disclosed in Hattori et al..

> Beetham et al. discloses the Hattori et al. mutation, at page 7, lines 22-25:
>
> [a]s one example, a mutation of the AHAS 3 gene at position 557 (Trp557Leu) confers resistance to imidazolinones (Rutledge et al., Mol. Gen. Genet. 229:31-40, 1991; Ouelette et al., Plant J. 2 :321-330, 1992) ; Hattori et al., Mol. Gen. Genet. 246 :419-425, 1995).

However, Beetham et al. fails to identify the Hattori et al. mutation as PM2, and in fact designates a different mutation as PM2 at page 3, lines 24-27:

> [t]his is exemplified by "Smart Canola," which has a mutation in AHAS 1 gene at amino acid position 635 (also known as PM1) and *a mutation in AHAS 3 at the same amino acid position (PM2).* The PM2 mutation also confers resistance to an additional family of herbicides. *(emphasis added)*

Further, at page 32, lines Beetham et al. discloses an MDON for generation of a serine to asparagine mutation at position 635 of the canola AHAS3 gene. The misidentification of the PM2 mutation in Beetham et al. would actually have lead those of ordinary skill away from the presently claimed method.

The Examiner admits that Rutledge et al. is deficient in a teaching of the nature of the mutations in AHAS 1 (PM1) and AHAS 3 (PM2) that confer resistance to imidazolinones.

Hattori et al. is deficient in any teaching of the PM1 mutation of *B. napus* AHAS1.

Sathasivan et al. is devoid of any teaching of the PM1 mutation of *B. napus* AHAS1. The Examiner's attention is directed to the statement in Rutledge et al. at page 39, first paragraph of "Discussion" section, that

> [t]he complexity of the AHAS multigene family was far more extensive among the *Brassica* species than reported for *A. thaliana* (Mazur et al. 1987) or *N. tabacum* (Lee et al. 1988).

Sathasivan et al. is therefore irrelevant to the presently claimed assay for the presence of the PM1 and PM2 mutations in *Brassica* species, since actual molecular analysis of the *B.*

napus imidazolinone-resistant AHAS 1 gene was necessary to identify the PM1 mutation.

The primary reference is deficient in teaching both the presently claimed method for detecting the PM1 and PM2 mutations and the PM2 mutation itself. The secondary references do not contain any teaching or suggestion that cures the deficiencies of Beetham et al. as applied to the presently claimed invention. None of the cited references contains any objective statement that provides motivation leading to the proposed combination. The Examiner's statement that "[o]ne would have been motivated to develop such an assay to efficiently determine the relative level of herbicide resistance in a plant using molecular techniques" is based on impermissible hindsight. *See, In re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Withdrawal of the rejection under § 103 is therefore respectfully requested.

In light of the amendments and arguments set forth above, Applicants submit that all of the rejections contained in the Office Action dated January 30, 2006 have been overcome, and the application is in condition for allowance. Should the Examiner wish to discuss the application further, he is invited to telephone the undersigned. If any additional fees are due with respect to this submission, authorization is hereby given to charge such fees, or to credit any overpayment, to Deposit Account No. 02-1197.

Respectfully submitted,
BASF CORPORATION

Patricia A. McDaniels

Patricia A. McDaniels
Reg. No. 33,194

Customer Number: 029137
26 Davis Drive
Research Triangle Park, NC 27709
(919) 547-2834 (direct dial)
(919) 547-2444 (facsimile)